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EXAMINER

POPHAM, JEFFREY D

ART UNIT PAPER NUMBER

2137

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/853,922

Applicant(s)

HOULBERG ET AL.

Examiner

Jeffrey D. Popham

Art Unit

2137

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____   |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____  | 6) <input type="checkbox"/> Other: ____                                     |

Art Unit: 2137

### **Remarks**

Claims 1-20 are pending.

### **Double Patenting**

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 16 of copending Application No. 09/505830. Although the conflicting claims are not identical, they are not patentably distinct from each other because narrower claim 16 of the parent application renders the broader claims of this application obvious.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### **Drawings**

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

- Fig. 3 not discussed in the detailed description of the preferred embodiment.
- Fig. 4, number 56.
- Fig. 6, numbers 76 and 80.
- Fig. 8, number 122.
- Fig. 9 not discussed in the detailed description of the preferred embodiment.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. Claims 1 and 12 objected to because of the following informalities:

- "micrcontroller" should be "microcontroller" in the following places:
  - o Claim 1, lines 12, 18, and 20.
  - o Claim 12, lines 17 and 23.
- "check word" should be "said check word" in claims 2 and 13, line 3.
- "said the status" should be "said status" in line 1 of claims 4, 6, 15, and 17.
- "encryption unit" should be "encryption device" in claim 9, lines 1 and 2 and claim 20, lines 1 and 2.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rollingson et al. (U.S. 5,156,357) in view of Borgen (U.S. H001414) in view of Best (U.S. 4,278,837) in view of Maher (U.S. 5,513,261) further in view of Le et al. (U.S. 5,883,956).

Regarding Claim 1,

Rollingson et al. disclose a missile telemetry system (Column 2, lines 27-40 and Fig. 1).

Rollingson et al. fail to disclose the encryption system used in the telemetry system.

Borgen, however, discloses the use of encryption in missile telemetry systems (Column 1, lines 29-36). This new system would be the missile telemetry system of Rollingson et al. using encryption.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use encryption in a missile telemetry system to hide data within the missile from being viewed by non-authorized people. One of ordinary skill in the art would have been motivated to do so in order to prevent the true information content of the digital data from being revealed during transmission.

The system from above does not disclose the encryption system to be used, only that there is encryption in the missile telemetry system.

Best, however, discloses an encryption system, including the following:

A method for providing a crypto key to an encryption device (Column 14, lines 21-29 and Fig. 3), the method comprising the steps of:

(a) generating the crypto key (Column 14, lines 21-29 and Fig. 3);

(b) transferring the crypto key to a microcontroller (Column 14, lines 21-29 and Fig. 3) having a memory for a duplication and a storage of the crypto key within the memory (Column 14, lines 21-29 and Fig. 3);

(d) storing the crypto key in the memory of the microcontroller (Column 14, lines 21-29 and Fig. 3);

(e) loading the crypto key from the memory of the microcontroller into the encryption device (Column 14, lines 21-29 and Fig. 3); and

(f) erasing the crypto key from the memory of the microcontroller upon a launch of the missile to prevent an enemy force from retrieving the crypto key and the associated check word from the missile after the launch of the missile (Column 6, lines 2-6).

This new system would be the telemetry system of Rollingson et al. using the encryption system of Best.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use the encryption system of Best in the system of Rollingson et al. in order to improve security. One of ordinary skill in the art would have been motivated to do so in order to improve the security and privacy of the data during storage, processing, and transmission (Column 2, lines 48-54).

The system from above does not disclose the use of a check word associated with the crypto key or the duplication of the crypto key.

Maher, however, discloses the use of a check word (Column 4, lines 1-9). This new system would be the system from above using a check word, as opposed to a check bit, to determine validity of the key within the missile telemetry system.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use a check word as opposed to a check bit in order to provide a better key validation. One of ordinary skill in the art would have been motivated to do so in order to verify that the correct key was being used.

The system from above does not disclose the duplication of a crypto key.

Le et al., however, disclose the duplication of a crypto key (Column 8, line 59 to Column 8, line 5). This new system would be the system from above with the addition of storing a backup (duplicate) of the crypto key and check word.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to provide a duplicate of the crypto key and check word in order to protect against problems in the system. One of ordinary skill in the art would have been motivated to do so in order to have a backup of the key and check word in case the originals get corrupted from a hardware malfunction or the like.

Regarding Claim 7,



Best discloses that a key loader is connected to the microcontroller and that the key loader generates the crypto key and transfers it to the microcontroller (Column 14, lines 21-29 and Fig. 3).

Regarding Claim 8,

The system from above does not disclose that the encryption device comprises a KGV-68 encryption device.

Borgen, however, discloses the use of a KGV-68 encryption device (Column 1, lines 37-44). This new system would be the system from claim 1 above using a KGV-68 encryption device.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use a KGV-68 encryption device in this system because it is a well-known encryption circuit made by Motorola. One of ordinary skill in the art would have been motivated to do so in order to provide an easily obtainable encryption circuit for this system.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rollinson et al. (U.S. 5,156,357) in view of Borgen (U.S. H001414) in view of Best (U.S. 4,278,837) in view of Maher (U.S. 5,513,261) in view of Le et al. (U.S. 5,883,956) as applied to claim 1 above, further in view of Sager (U.S. 6,473,742).

The system from above does not disclose that the duplicate of the crypto key and check word will be loaded into the encryption device when the encryption device rejects the crypto key.

Sager, however, discloses this step of loading the crypto key and check word into the encryption device when it rejects the crypto key (Column 4, lines 20-28). This new system would be the system from claim 1 above with the added step of loading the duplicate of the crypto key and check word when the encryption device rejects the crypto key.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to load the duplicate of the crypto key and check word when the encryption device rejects the crypto key in case the original crypto key or check word were corrupted and failed because of this corruption. One of ordinary skill in the art would have been motivated to do so in order to confirm whether the original crypto key or check word were corrupted or whether they were the wrong ones.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rollinson et al. (U.S. 5,156,357) in view of Borgen (U.S. H001414) in view of Best (U.S. 4,278,837) in view of Maher (U.S. 5,513,261) in view of Le et al. (U.S. 5,883,956) as applied to claim 1 above, further in view of Levie et al. (U.S. 6,065,679).

The system from above does not disclose that there is an indication of the status of a store of the crypto key and associated check word.

Levie et al., however, disclose the indication of the status of a store of the crypto key (Column 56, lines 52-61). This new system would be the system from claim 1 above with the key store status information from Levie et al.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to add the key store status information from Levie et al. into the system of claim 1 in order to determine if the key was stored into memory. One of ordinary skill in the art would have been motivated to do so in order to determine if the key was properly stored in memory or not.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rollingson et al. (U.S. 5,156,357) in view of Borgen (U.S. H001414) in view of Best (U.S. 4,278,837) in view of Maher (U.S. 5,513,261) in view of Le et al. (U.S. 5,883,956) in view of Levie et al. (U.S. 6,065,679) as applied to claim 3 above, further in view of Blair et al. (U.S. 5,187,352).

The system from above does not disclose that the status indication is in the form of a light emitting diode (LED) connected to the microcontroller.

Blair et al., however, disclose the use a LED when indicating status of the system (Column 4, lines 25-28). This new system would be the system from claim 3 above with a LED on the interface.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use a LED to indicate status of the store of the crypto key and check word in order to let the user know what is happening. One of ordinary skill in the art would have been motivated to do so in order to indicate to the user the status of this component of the encryption system.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rollingson et al. (U.S. 5,156,357) in view of Borgen (U.S. H001414) in view of Best (U.S. 4,278,837) in view of Maher (U.S. 5,513,261) in view of Le et al. (U.S. 5,883,956) as applied to claim 1 above, further in view of Liu et al. (U.S. 6,760,752).

The system from above does not disclose that there is an indication of the status of an erase of the crypto key and associated check word.

Liu et al., however, disclose the indication of the status of an erase of the crypto key (Column 20, lines 50-55). This new system would be the system from claim 1 above with the key erase status information from Liu et al.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to add the key erase status information from Liu et al. into the system of claim 1 in order to keep the user updated. One of ordinary skill in the art would have been motivated to do so in order to alert the user as to the progress of the erase.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rollingson et al. (U.S. 5,156,357) in view of Borgen (U.S. H001414) in view of Best (U.S. 4,278,837) in view of Maher (U.S. 5,513,261) in view of Le et al. (U.S. 5,883,956) in view of Liu et al. (U.S. 6,760,752) as applied to claim 5 above, further in view of Blair et al. (U.S. 5,187,352).

The system from above does not disclose that the status indication is in the form of a light emitting diode (LED) connected to the microcontroller.

Blair et al., however, disclose the use a LED when indicating status of the system (Column 4, lines 25-28). This new system would be the system from claim 3 above with a LED on the interface.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use a LED to indicate status of the erase of the crypto key and check word in order to let the user know what is happening. One of ordinary skill in the art would have been motivated to do so in order to indicate to the user the status of this component of the encryption system.

11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rollingson et al. (U.S. 5,156,357) in view of Borgen (U.S. H001414) in view of Best (U.S. 4,278,837) in view of Maher (U.S. 5,513,261) in view of Le et al. (U.S. 5,883,956) as applied to claim 1 above, further in view of Campbell et al. (U.S. 5,768,495).

The system from above does not disclose that the microcontroller comprises an eight bit microcontroller having an electrically erasable programmable read only memory (EEPROM) adapted for storing the crypto key, check word, and duplicates of both.

Campbell et al., however, disclose this configuration of having an 8 bit microcontroller with an EEPROM (Column 3, lines 55-63). This new system would be the system of claim 1 above with the microcontroller and EEPROM from Campbell et al.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use an 8 bit microcontroller with EEPROM for storing the key, check word, and duplicates of both in order to provide a microcontroller that is widely used and known, as well as make the key more secure in EEPROM. One of ordinary skill in the art would have been motivated to do so in order to provide a memory for storing the key, check word, and duplicates of both that must be completely erased when it is changed (Column 3, lines 55-63).

12. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rollingson et al. (U.S. 5,156,357) in view of Borgen (U.S. H001414) in view of Best (U.S. 4,278,837) in view of Maher (U.S. 5,513,261) in view of Le et al. (U.S. 5,883,956) as applied to claim 1 above, further in view of Tu et al. (U.S. 5,682,403).

Regarding Claim 10,

The system from above does not disclose the steps of turning off a transmitter when transferring the crypto key and check word to the microcontroller or turning the transmitter back on once the transfer is complete.

Tu et al., however, disclose the steps of turning off the transmitter when initializing the system (Column 4, line 65 to Column 5, line 5) and turning the transmitter back on once the initialization is complete (Column 5, lines 16-19). Since the crypto key and check word would be transferred

to the microcontroller during initialization of the system, Tu et al. indeed disclose that which is in claim 10.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to turn off the transmitter when transferring the key and check word to the microcontroller in order to prevent invalid transmissions. One of ordinary skill in the art would have been motivated to do so in order to prevent a transmission of the crypto key and check word.

Regarding Claim 11,

The system from above does not disclose the steps of turning off a transmitter when loading the crypto key and check word into the encryption device or turning the transmitter back on once the transfer is complete.

Tu et al., however, disclose the steps of turning off the transmitter when initializing the system (Column 4, line 65 to Column 5, line 5) and turning the transmitter back on once the initialization is complete (Column 5, lines 16-19). Since the crypto key and check word would be transferred to the microcontroller during initialization of the system, Tu et al. indeed disclose that which is in claim 11.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to turn off the transmitter when loading the key and check word into the encryption device in order to prevent invalid

transmissions. One of ordinary skill in the art would have been motivated to do so in order to prevent a transmission of the crypto key and check word.

13. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rollingson et al. (U.S. 5,156,357) in view of Borgen (U.S. H001414) in view of Best (U.S. 4,278,837) in view of Maher (U.S. 5,513,261) in view of Le et al. (U.S. 5,883,956), further in view of Tu et al. (U.S. 5,682,403).

Rollingson et al. disclose a missile telemetry system (Column 2, lines 27-40 and Fig. 1).

Rollingson et al. fail to disclose the encryption system to be used in the telemetry system.

Best, however, discloses an encryption system, including the following:

A method for providing a crypto key to an encryption device (Column 14, lines 21-29 and Fig. 3), the method comprising the steps of:

(a) generating the crypto key (Column 14, lines 21-29 and Fig. 3);

(b) transferring the crypto key to a microcontroller (Column 14, lines 21-29 and Fig. 3) having a memory for a duplication and storage of the crypto key within the memory (Column 14, lines 21-29 and Fig. 3);

(e) storing the crypto key in the memory of the microcontroller (Column 14, lines 21-29 and Fig. 3);



(h) loading the crypto key from the memory of the microcontroller into the encryption device (Column 14, lines 21-29 and Fig. 3);

(j) erasing the crypto key from the memory of the microcontroller upon a launch of the missile to prevent an enemy force from retrieving the crypto key and the associated check word from the missile after the launch of the missile (Column 6, lines 2-6).

This new system would be the system of Rollingson et al. using the encryption system of Best.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use the encryption system of Best in the system of Rollingson et al. in order to improve security. One of ordinary skill in the art would have been motivated to do so in order to improve the security and privacy of the data during storage, processing, and transmission (Column 2, lines 48-54).

Best does not disclose the use of a check word associated with the crypto key, duplicating the crypto key and check word, or the control of the transmitter.

Maher, however, discloses the use of a check word (Column 4, lines 1-9). This new system would be the system from above using a check word, as opposed to a check bit, to determine validity of the key within the missile telemetry system.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use a check word as opposed to a check bit in order to

provide a better key validation. One of ordinary skill in the art would have been motivated to do so in order to verify that the correct key was being used.

Maher does not disclose duplicating the crypto key and check word or the control of the transmitter.

Le et al., however, disclose the duplication of a crypto key (Column 8, line 59 to Column 8, line 5). This new system would be the system from above with the addition of storing a backup (duplicate) of the crypto key and check word.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to provide a duplicate of the crypto key and check word in order to protect against problems in the system. One of ordinary skill in the art would have been motivated to do so in order to have a backup of the key and check word in case the originals get corrupted from a hardware malfunction or the like.

Le et al. do not disclose the control of the transmitter.

Tu et al., however, disclose the control of the transmitter as follows:

(c) disabling a transmitter connected to the microcontroller when the transfer of the crypto key and check word to the microcontroller occurs (Column 4, line 65 to Column 5, line 5);

(f) enabling the transmitter after the storage of the crypto key and check word within the memory of the microcontroller (Column 5, lines 16-19);

(g) disabling the transmitter prior to a load of the crypto key and check word into the encryption device (Column 4, line 65 to Column 5, line 5);

(i) enabling the transmitter after the load of the crypto key and check word into the encryption device (Column 5, lines 16-19).

This new system would be the system from above with the added steps of enabling and disabling the transmitter when transferring and loading of the crypto key and check word is taking place during initialization.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to turn off the transmitter when transferring and loading the key and check word into the microcontroller and encryption device, respectively, in order to prevent invalid transmissions. One of ordinary skill in the art would have been motivated to add the transmitter control steps from Tu et al. to the system from above in order to prevent a transmission of the crypto key and check word.

14. Claims 13, 14, 15, 16, 17, 18, 19, and 20 are rejected because they are substantially equivalent to claims 2, 3, 4, 5, 6, 7, 8, and 9, respectively. Therefore, claims 13-20 are rejected under similar rationale.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey D. Popham whose telephone number is (571)-272-7215. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on (571)-272-3868. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).